

CLAIMS

What is claimed is:-

1. (Currently amended) An aerofoil incorporating a step along its chord, wherein said step is defined as a substantial difference between the level of the leading edge and the level of the trailing edge of said aerofoil at zero angle of attack;
 - said step is confined around the aerofoil chord center;
 - said step length is between one third and two thirds of length of said aerofoil chord;
 - said step provides compression of the airflow directly beneath said aerofoil;
 - said step provides a high pressure airflow area below said aerofoil;
 - said step provides a low pressure airflow above said aerofoil at;
 - said step provides said aerofoil with greater depth than the actual thickness of said aerofoil;
 - said depth provides said aerofoil with greater strength than a conventional aerofoil;
 - said step is blended into said aerofoil profile neatly to create a smooth and aerodynamic airflow over the section.
2. (Previously presented) An aerofoil as claimed in claim 1 manufactured as a high aspect ratio aircraft wing incorporating said step;
 - said step depth is between half of said wing thickness and once said wing thickness at said wing root;
 - said step tapers, from maximum depth inboard of said wing, to zero depth at the tip of said wing.
3. (Previously presented) An aerofoil as claimed in claim 1 manufactured as a low aspect ratio aircraft wing incorporating said step;
 - said step depth is between once said wing thickness and twice said wing thickness at said wing root;

said step tapers, from maximum depth inboard of said wing, to zero depth at the tip of said wing.

4. (Previously presented) An aerofoil as claimed in claim 1 manufactured as a delta aircraft wing incorporating said step;

said step depth is between twice said wing thickness and three times said wing thickness at said wing root;

said step tapers, from maximum depth inboard of said wing, to zero depth at the tip of said wing.

5. (Previously presented) An aerofoil as claimed in claim 1 manufactured as a helicopter rotor blade incorporating said step;

said step depth is between half of said blade thickness and twice said blade thickness along the whole length of said blade.

6. (Previously presented) An aerofoil as claimed in claim 1 manufactured as an aircraft propeller blade incorporating said step;

said step depth is between half of said blade thickness and twice said blade thickness along the whole length of said blade.

7. (Previously presented) An aerofoil as claimed in claim 1 manufactured as a turbofan fan blade incorporating said step;

said step depth is between half said blade thickness and twice said blade thickness at said blade tip;

said step tapers, from maximum depth at the tip of said blade, to zero depth at the root of said blade.

8. (Previously presented) An aerofoil as claimed in claim 1 used for any kind of lift or down force, thrust or suction or as an impellor.